



UC-250L2 BISS DVB-S2 Modulator

User's Manual

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SW: V6.11

HW: V4.5

DISITRON INDUSTRIES INC.

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Chapter 1 product outline

1.1 Outline

The Upcom UC-250L2 BISS DVB-S2 Modulator is a professional grade modulation device developed according to EN302307 DVB-S2 second generation European broadcast standard. It adopts advanced framing structure, channel coding and modulation methods which increases the device's transmission ability by more than 50% over previous generation DVB-S modulators under the same broadcast conditions. It will also provide better reception ability in the same spectral efficiency. The device is backwards compatible with DVB-S EN300421 modulation standards. The device can be controlled locally through front panel a LCD screen and navigation buttons or remotely through a NMS client.

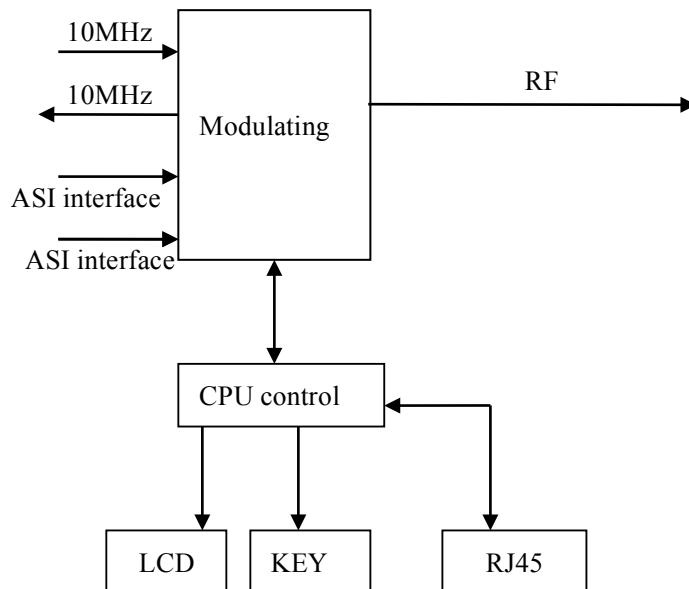
1.2 Features

- Fully complies with DVB-S2 (EN302307) modulation standard.
- Backwards-compatible with DVB-S (EN300421) modulation standard.
- Two ASI inputs supporting automatic switchover in case of signal loss.
- Supports BISS scrambling modes: 0, 1 & E.
- Supports local and remote control.
- Output level attenuation control.
- 10MHz outer reference clock input.
- Output frequency range: 950~2150MHz.
- Full-size front panel LCD display and navigation buttons.

1.3 Specifications

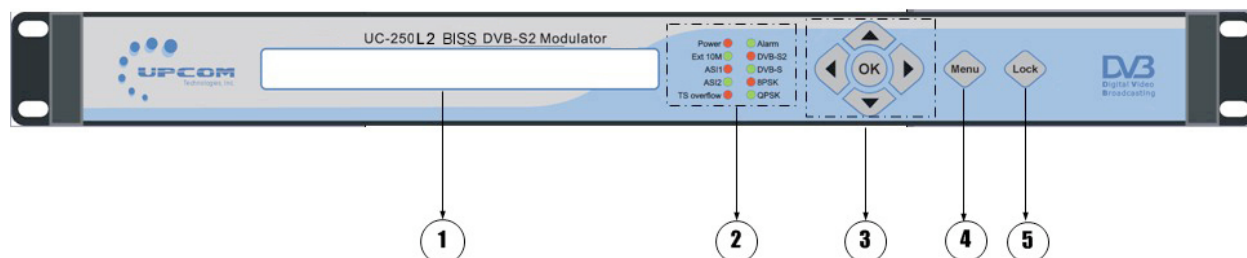
MPEG-TS Input	Supports both packet and byte mode TS inputs		
	Supports 188/204Byte transmission stream packets		
	Two ASI inputs, supporting auto switchover		
	ASI input connector: BNC, impedance 75Ω		
RF Output	Frequency is adjustable from 950 to 2150MHz		
	Output Level attenuation is adjustable from 0 to 31.5 dB; in steps of 0.5 dB.		
	Maximum Output level: 0dBm		
	MER≥32dB		
	Connector: N type, impedance 50Ω		
Channel Coding and Modulation	Outer coding	DVB-S	DVB-S2
		RS coding	BCH coding
	Inner coding	Convolutional	LDPC coding
	Code Rate	1/2,2/3,3/4,5/6,7/8	1/2,3/5,2/3,3/4,4/5,5/6,8/9,9/10
	Constellation	QPSK	QPSK,8PSK
	Roll-off Factor	0.2, 0.25, 0.35	0.2, 0.25, 0.35
	Symbol Rate	0.1~45MBaud	0.1~30M@8PSK; 0.1~45 M@QPSK
	BISS Scramble	----	Mode0, Mode1, Mode E
Miscellaneous	Dimension	44mm×482mm×410mm	
	Environmental	0~45℃ (operation), -20~80℃ (storage)	
	Power	100-240VAC±10%,50Hz-60Hz	

1.4 Principle chart



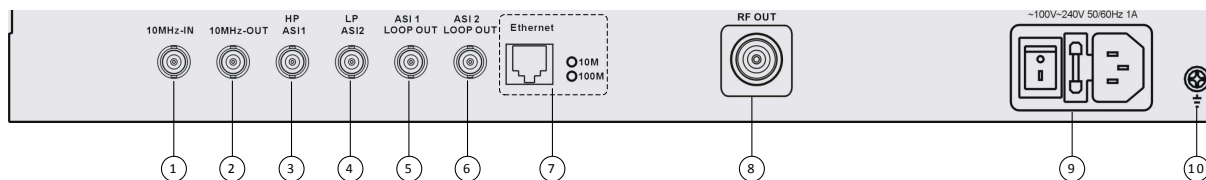
1.5 Appearance and description

Front Panel Illustration



1.	LCD display	
2.	Indicators	Power : Power Indicator
		Ext 10M : 10MHZ Outer Reference Clock
		ASI1 : ASI1 input
		ASI2 : ASI2 input
		TS Overflow: Input TS bit rate over the Transmission bandwidth
		Alarm : Alarming Indicator
		DVB-S2: Current Modulation is DVB-S2
		DVB-S: Current Modulation is DVB-S
		8PSK: Current constellation is 8PSK
		QPSK: Current constellation is QPSK
3.	Up/Down/Left /Right/Confirmation key	
4.	Menu key	
5.	Locking key	

Rear Panel Illustration



1.	Input of 10Mhz Outer Reference Clock
2.	Output of 10Mhz Inner Reference Clock
3.	ASI1Input
4.	ASI2 Input
5.	ASI1Loop Output
6.	ASI2 Loop Output
7.	Network Interface
8.	RF Output
9.	Power Socket
10.	Grounding pole

Chapter 2 Installation Guide

2.1 Initial Check

When first opening the device packaging, please check contents against the following list:

- UC-250L2 BISS DVB-S2 Modulator
- ASI Cable
- Power Cord

If any item is missing please contact your point of purchase.

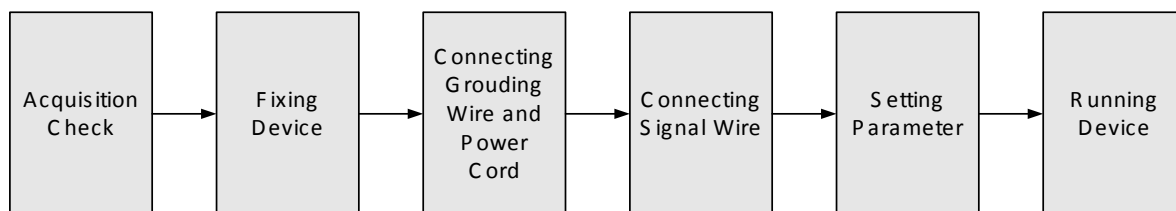
2.2 Installation

Please follow all installation instructions included in this chapter. Users can refer to the rear panel chart during installation.

The main content of this chapter include:

- Checking the device for shipping damage
- Preparing relevant environment for installation
- Installing UC-250L2 Modulator
- Connecting signal cables
- Connecting communication port (optional)

2.2.1 Device Installation Flow Chart Illustration:



2.2.2 Environmental Requirements

Item	Requirement
Datcenter	The distance between any 2 devices should be 1.2~1.5m. Walls should be no closer than 0.8m.
Datcenter Floor	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: $1 \times 10^7 \sim 1 \times 10^{10} \Omega$, Grounding current limiting resistance: 1M (Floor bearing should be greater than 450Kg/m ²)
Environment Temperature	5~40℃(sustainable), 0~45℃(short term), Installing air-conditioning is recommended.
Relative Humidity	20%~80% sustainable 10%~90% short time
Pressure	86~105KPa
Door & Window	Installing rubber strips for sealing door-gaps and dual pane glasses for windows is recommended.
Fire Protection	Fire alarm system and extinguishers are required.
Power	Ensure air conditioning, lighting and device power sources are on different circuits. Device requires AC power 100-240V 50-60Hz. Please carefully check before running.

2.2.3 Grounding Requirement

- Good grounding practices will ensure the proper function and long-term reliability of the device. This will provide protection from power surges and interference. It is imperative the unit is used only when properly grounded.
- Coaxial cable's outer conductor and isolation layers should keep proper electric conduction with the device's metal housing.
- Grounding wires must contain copper conductors in order to reduce high frequency impedance. The grounding wire must also be as thick and as short as possible.
- Users should make sure the two terminations of their grounding cables are properly secured. Current pass-through should be tested. Anti-rust should be applied on all relevant connections.
- Do not include any other devices in this unit's grounding circuit.
- The minimum contact patch area between the grounding wire and the device's frame should be no less than 25mm^2 .

2.2.4 Frame Grounding

All the machine frames should be connected with protective copper strip. The grounding wire should be as short as possible and avoid circling. The minimum contact patch area between the grounding wire and the device's frame should be no less than 25mm^2 .

2.2.5 Device Grounding

Connect the device's grounding point to the rack's grounding pole with copper wire.

2.3 Grounding Wire Connection

The grounding wire conductive screw is located on the device's rear panel adjacent to the AC Plug connector.

- Connecting Power Cord

User should insert one end into power supply socket and the other end into device's AC power source.

- Connecting Grounding Wire

If possible, connect the device's grounding wire in an unshared circuit. If the grounding circuit is to be shared with other devices, the grounding resistance should be equal to or less than 1Ω .

⚠ Caution:

Before connecting power cord to UC-250L2 BISS DVB-S2 Modulator, user should set the power switch to "OFF".

2.4 Signal Cable Connections

The signal cable connections consist of input and output signal cables. Descriptions of the possible connection types follow below:

2.4.1 ASI input and loop output cable illustration:



2.4.2 RF output interface connection

The N-type RF output interface can be found on the device's rear panel labeled "RF OUT". Connect this interface to the transmission equipment's RF input using coaxial cables. The physical connector is illustrated below:



Chapter 3 Operation

The UC-250L2 Modulator's front panel contains an LCD screen and navigation buttons. Users can adjust the device configuration using this local interface.

Keyboard Function Description:

MENU: Canceling presently entered value, resuming previous setting; Return to previous menu.

ENTER: Activates the parameters that need modification, or confirming the change after modification.

LEFT/RIGHT: Menu navigation.

UP/DOWN: Menu navigation.

LOCK: Lock the screen / cancel the lock state. After pressing lock key, the system will question the user whether to save present settings to memory. If not, the LCD will display the current configuration state.

At the "Resume Factory Settings" submenu, users can press "ENTER" key to confirm a return to factory settings. This will erase all current settings.

3.1 Main Interface

The front panel LCD first row will display Company Name, Device Type and real time input bit rate in the. The second will display output RF frequency, Symbol Rate and FEC ratio (Forward Error Correction).

UPCOM UC-250L2 BISS	TS=05.654Mbps
RF=1000.00MHz	Symb Rate=27.500M Conv=3/4

UPCOM UC-250L2 BISS	TS=05.654Mbps
RF=1000.00MHz	Symb Rate=27.500M FEC=3/4

3.2 General setting

Pressing the "LOCK" key will unlock the front panel and display the following menus:

▶ 1 Alarm Status	2 System Setting
3 Output Setting	4 Network Setting

▶ 5 Saving Config	6 Loading Config
7 Version	8 Language

By pressing UP or DOWN key to the specified menu item, then pressing ENTER to enter the submenu as following pages:

Users can navigate to the desired menus by using the UP, DOWN, LEFT, RIGHT and ENTER control buttons.

3.2.1 Alarm Status

Temperature:	34 Centidegree
Alarm Count:	0

3.2.1.1 Temperature

The figure displayed in the first row shows the real-time device housing temperature.

3.2.1.2 Alarm count

The Alarm count in the second row indicates the number of alarms. Whenever an abnormal event happens, the number will increase.

3.2.1.3 Alarm descriptions

Users can navigate to this submenu to check alarm details. The alarm types are described below:

1. **Ref Clock Lose:** The modulator cannot detect external 10MHZ reference clock input.
2. **No input TS :** There is no detected ASI signal input.
3. **Input TS Overflow:** Input TS bit rate over transmission bandwidth limit.
4. **Internal error:** Internal device error.
5. **Temperature Alarm:** When the modulator's housing temperature exceeds normal range.

Temperature:	34 Centidegree
Alarm Count:	4

1. Ref Clock Lose	2. No input TS
4. Internal Error	5. Temperature Alarm

3.2.2 System setting

Navigating to the System Setting Menu will display the following submenus:

▶ 2.1 Alarm Status	2.2 REF Clock Sel
2.3 Input Select	2.4 Symbol Rate
▶ 2.5 Roll Off	2.6 Conv Code Rate
2.7 Constellation	2.8 Pilot Insert
▶ 2.9 Biss Setting	

3.2.2.1 Modulation Mode

2.1 Modulate Mode	
DVB_S	
2.1 Modulate Mode	1/1
[DVB_S]	DVB_S2

This submenu will allow user to choose between DVB-S and DVB-S2 broadcasting.

DVB-S: QPSK DVB-S Modulation.

DVB-S2: 8PSK or QPSK BISS DVB-S2 Modulation.

3.2.2.2 Reference Clock Select

2.2 REF Clock Sel	
internal	
2.2 REF Clock Sel	1/1
[internal]	external auto

Internal: The modulator uses internal 10MHz crystal oscillator as reference clock.

External: The modulator uses external 10 MHz input as reference clock.

Auto: The device will prioritize any detected external reference clock. If none is present, system will default to internal clock.

3.2.2.3 Input select

2.3 Input Select
ASI 1

2.3 Input Select 1/1
[ASI 1] ASI 2 Auto(ASI 1) Auto(ASI 2)

This submenu will allow users to select the input interface.

ASI1: The input TS sourced from port ASI1.

ASI2: The input TS sourced from port ASI2.

Auto (ASI1): The modulator will preferably select the input TS from ASI1 if it exists; otherwise it will select the input TS from ASI 2.

Auto (ASI2): The modulator will preferably select the input TS from ASI2 if it exists; otherwise it will select the input TS from ASI 1.

3.2.2.4 Symbol rate

2.4 Symbol Rate
27.500M

Range: 0.1-45M@QPSK Constellation

0.1-30M@8PSK Constellation

3.2.2.5 Roll-off factor

2.5 Roll Off
0.35

2.5 Roll Off 1/1
[0.35] 0.25 0.20

This submenu will allow users to select the transmission Roll Off Factor.

There are 3 possible options: 0.35, 0.25 and 0.20.

3.2.2.6 FEC rate/Convolutional code rate

2.6 Conv Code Rate
3/4

2.6 Conv Code Rate 1/1
1/2 2/3 [3/4] 5/6 7/8

When set to DVB-S broadcasting, the convolutional code value can be set in this sub-menu. The possible options are: 1/2, 2/3, 3/4, 5/6, 7/8.

2.6 FEC Rate
1/2

2.6 FEC Rate 1/2
[1/2] 3/5 2/3 3/4 4/5 5/6

2.6 FEC Rate 1/2
[8/9] 9/10

When set to DVB-S2 QPSK broadcasting, the FEC (Forward Error Correction) ratio can be set in this sub-menu. The possible rates are: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10.

2.6 FEC Rate
3/5

2.6 FEC Rate 1/1
[3/5] 2/3 3/4 5/6 8/9 9/10

When set to DVB-S2 8PSK broadcasting, the FEC (Forward Error Correction) ratio can be set in this sub-menu. The possible rates are: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10.

3.2.2.7 Constellation

This menu item only shows when MODULATOR STATE is set to DVB-S2.

2.7 Constellation QPSK		
2.7 Constellation [QPSK]	8PSK	1/1

Users can choose between QPSK or 8PSK constellations.

3.2.2.8 Pilot Insert

This menu item only shows when MODULATOR STATE is set to DVB-S2

2.8 Pilot Insert Off		
2.8 Pilot Insert [Off]	On	1/1

User can choose whether to insert the Pilot block.

3.2.2.9 BISS Setting

BISS: Basic Interoperable Scrambling System

There are three available BISS Scrambling modes: 0, 1 & E.

Sub-menus will vary depending on mode selection.

Mode 0 is equivalent to OFF, or unscrambled Free-to-Air programming.

9.1 Biss Mode Mode 0

9.1 Biss Mode

Modes 1 and E will enable BISS scrambling. Mode 1 will require a session word. Mode E will require an encrypted session word.

3.2.2.9.1 Mode 1

The following sub-menus will be available under Mode 1 scrambling:

9.1 Biss Mode	9.2 Input Port [00]
9.3 S W Data	

3.2.2.9.1.1 Biss Mode

9.1 Biss Mode
Mode 1

This submenu will display the currently selected BISS mode.

3.2.2.9.1.2 Input Port

After parsing, input programming will display in this sub-menu. Users can navigate to individual programs to enable BISS scrambling.

2.01 CCTV-1	2.02 CCTV-2
2.03 CCTV-7	2.04 CCTV-10

2.05 CCTV-11	2.06 CCTV-12
2.07 CCTV-MUSIC	

0.01 CCTV-1 [NO]	Yes
---------------------	-----

3.2.2.9.1.3 SW Data

9.3 S W Data
0X000000000000

9.3 S W Data
0X0000000000000

SW: Session Word, a fixed 12-character number.

User can set a session word for scrambling control.

Once the SW (Session Word) has been set, a 64-bit CW (Control Word) will be derived from the SW according to the DVB-CSA (common scrambling algorithm) specification.

Note: Enter hexadecimal values.

3.2.2.9.2 Mode E

When the modulator is set to Mode E, the display will show the following:

9.1 Biss Mode	9.2 Input Port [00]
9.3 ID Select	9.4 E S W Data

3.2.2.9.2.1 Biss Mode

9.1 Biss Mode
Mode E

This sub-menu will show the currently selected BISS scrambling mode. Press "ENTER" to change mode.

3.2.2.9.2.2 Input Port

After parsing, input programming will display in this sub-menu. Users can navigate to individual programs to enable BISS scrambling.

2.01 CCTV-1
2.03 CCTV-7

2.02 CCTV-2
2.04 CCTV-10

2.05 CCTV-11
2.07 CCTV-MUSIC

2.06 CCTV-12

0.01 CCTV-1
[NO]

Yes

3.2.2.9.2.3 ID Select

This submenu will allow users to enter the encrypted session word.

9.3 ID Select
Device

9.3 ID Select
[Device]

Input

9.5 Input Data
0X0000000000000000

If "Device" is selected, enter a 14-character number to be set as one part of an encrypted session word. An ESW (encrypted session word) is also necessary. Refer to menu 3.2.2.8.2.4 for more details.

If "Input" is selected, fixed data from the device will be used to encrypt programs.

3.2.2.9.2.4 ESW Data

9.4 ESW Data
0X0000000000000000

ESW: Encrypted Session Word, a 16-character number

This submenu will not be visible if device is set to "Device" mode. Users can set an ESW value together with the 'Input ID' to complete encryption.

Note: Once the ESW has been entered by the front panel or by the NMS client, it shall become impossible to read it back through any unit interface.

The manual entry of the ESW shall also be in hexadecimal form; the 16 digits are entered with the most-significant digit first.

3.2.3 Output setting

Navigating to Output Setting Menu will display the following submenus:

- | | |
|--------------------|------------------|
| ▶ 3.1 RF Frequency | 3.2 RF Level ATT |
| 3.3 Spec Invert | 3.4 RF Output |

3.2.3.1 RF setting

This submenu will allow users to set the RF output frequency. The RF output frequency ranges from 950 to 2150MHz.

3.1 RF Frequency
1000.00MHz

3.2.3.2 RF ATT Setting

This submenu will allow users to set the RF output attenuation. The RF attenuation ranges from 0-31.5db, adjusted in 0.5db steps.

3.2 RF Level ATT
30.5 db ↕

3.2.3.3 Spectrum Invert

This submenu will allow users to invert the RF spectrum output.

3.3 Spec Invert
normal

3.3 Spec Invert
[normal] invert 1/1

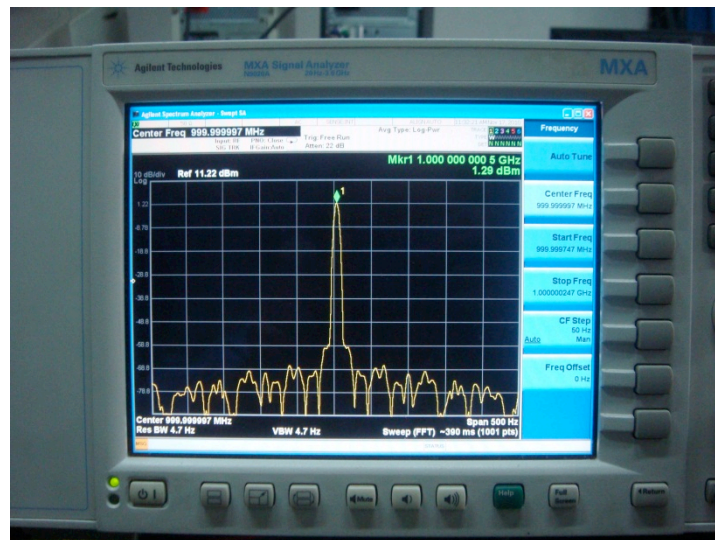
3.2.3.4 RF Output

3.4 RF Output
single tone

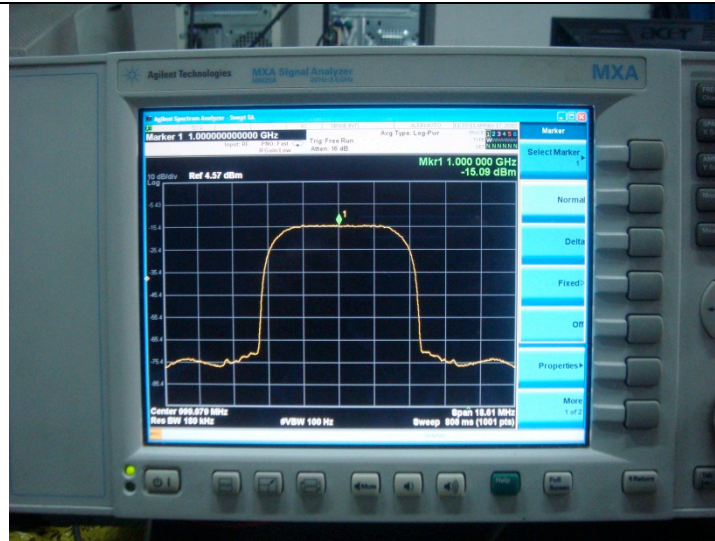
3.4 RF Output
[single tone] modulation 1/1
off

This submenu will allow users to set the RF output mode for different applications.

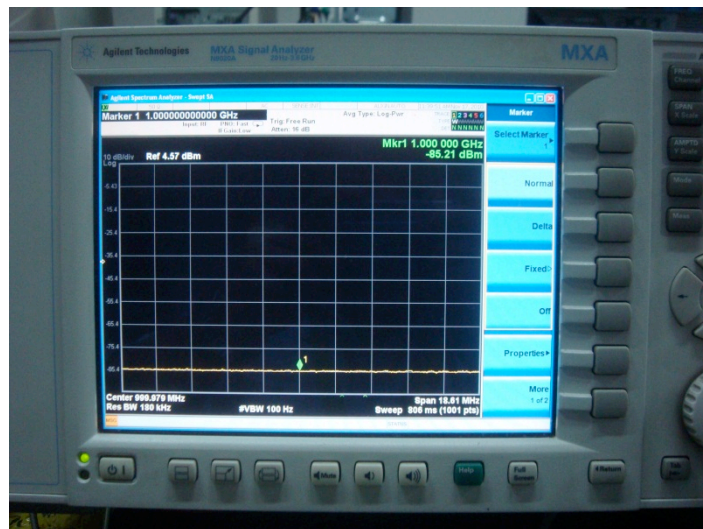
Single tone: The RF output is an un-modulated carrier.



Modulation: A modulated output carrier.



Off: Turns off the RF output.



3.2.4 Network setting

Navigating to the Network Setting menu will display the following submenus:

- ▶ 4.1 IP Address
- ▶ 4.2 Subnet Mask
- ▶ 4.3 Gateway
- ▶ 4.4 Console Address
- ▶ 4.5 MAC Address

Note: The unique MAC address is set at the factory.

4.1 IP Address
192.168.000.136

4.2 Subnet Mask
255.255.255.000

4.3 Gateway
192.168.000.001

4.4 Console Address
192.168.000.221

4.5 MAC Address
ffffffffffffff

3.2.5 Saving config

User can choose to save the current configured parameters by pressing ENTER key.

Saving, please wait:
erasing...

3.2.6 Load config

► 6.1 Load Saved CFG 6.2 Load Default CFG

User can restore the device to the last saved configuration by choosing “6.1” or restore the device to factory configuration by choosing “6.2”.

3.2.7 Version

User can check the hardware and software versions of the equipment in this submenu.

UPCOM
SW 6.01 HW 4.1

3.2.8 Language Settings

This submenu will allow users to set the system language.

8 Language
[English]

中文

Chapter 4 NMS Setting

Network Management System Profile

A Network Management System enables the remote control and monitoring of Digital TV equipment through a computer network.

4.1 Installation

NMS software does not require installation. Extract NMS files to desired directory on local drives. Two files will be generated once NMS client has been executed.

- Network management software X.XXY.log (preserves the log file)
- Info. Bin (user configuration data)

4.2 Software Operation

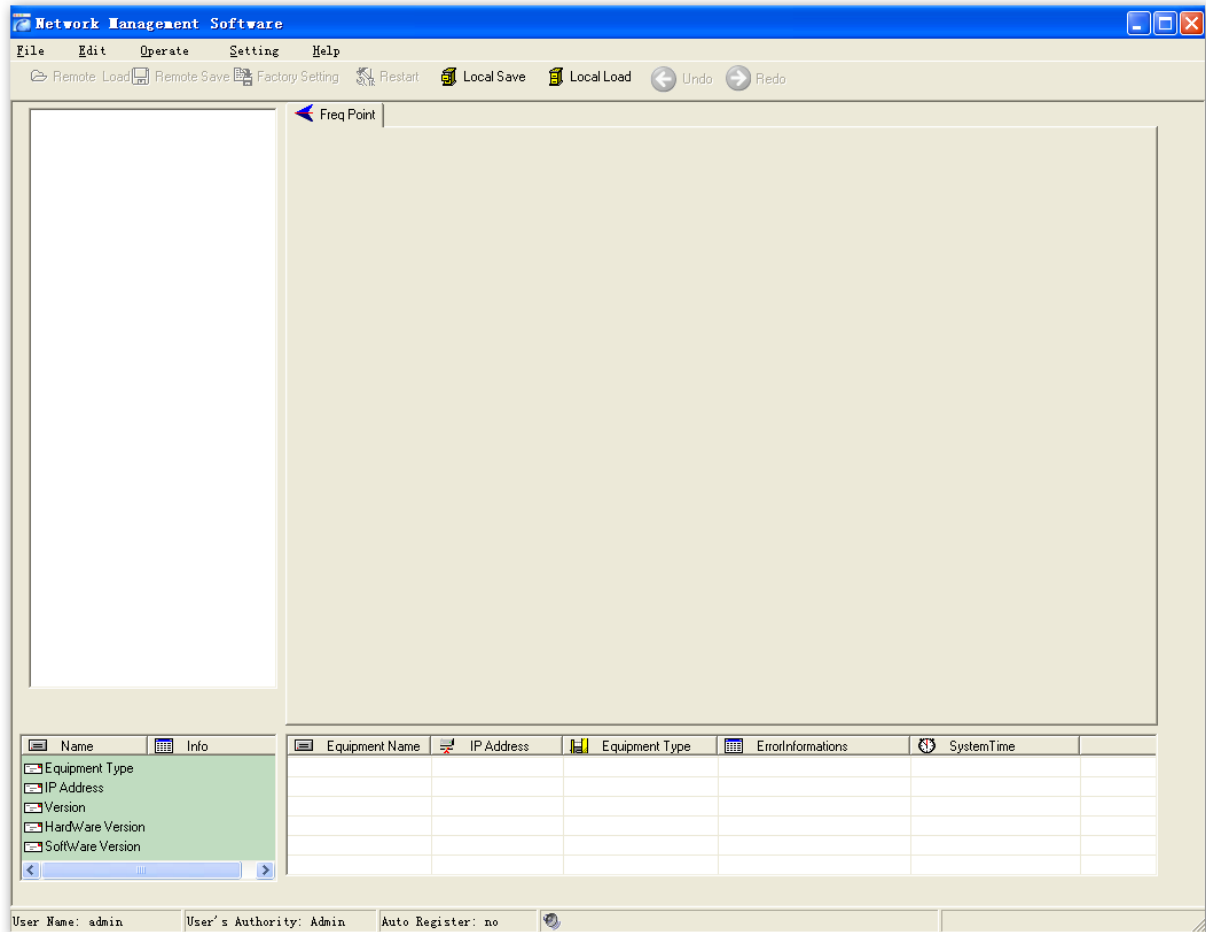
4.2.1 Login Interface

A login interface will pop up when the software is running and give user prompts to input user name and password:



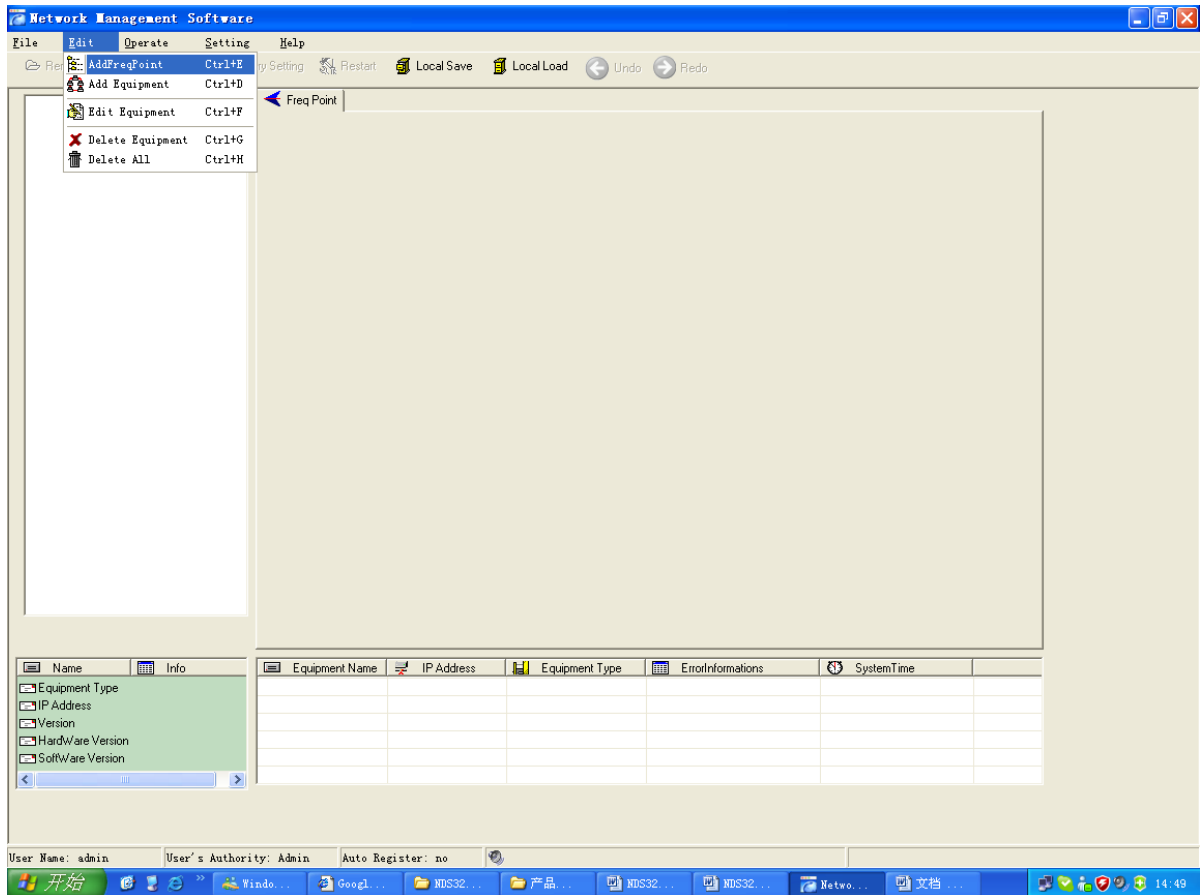
User can login the NMS by pressing **Confirm** key after inputting user name and password. Default username and password is: **admin**

4.2.2 Main Interface

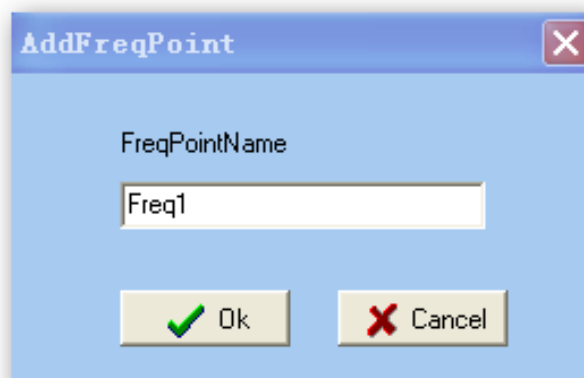


This software will allow the user to edit various parameters in the device tree for management and classification.

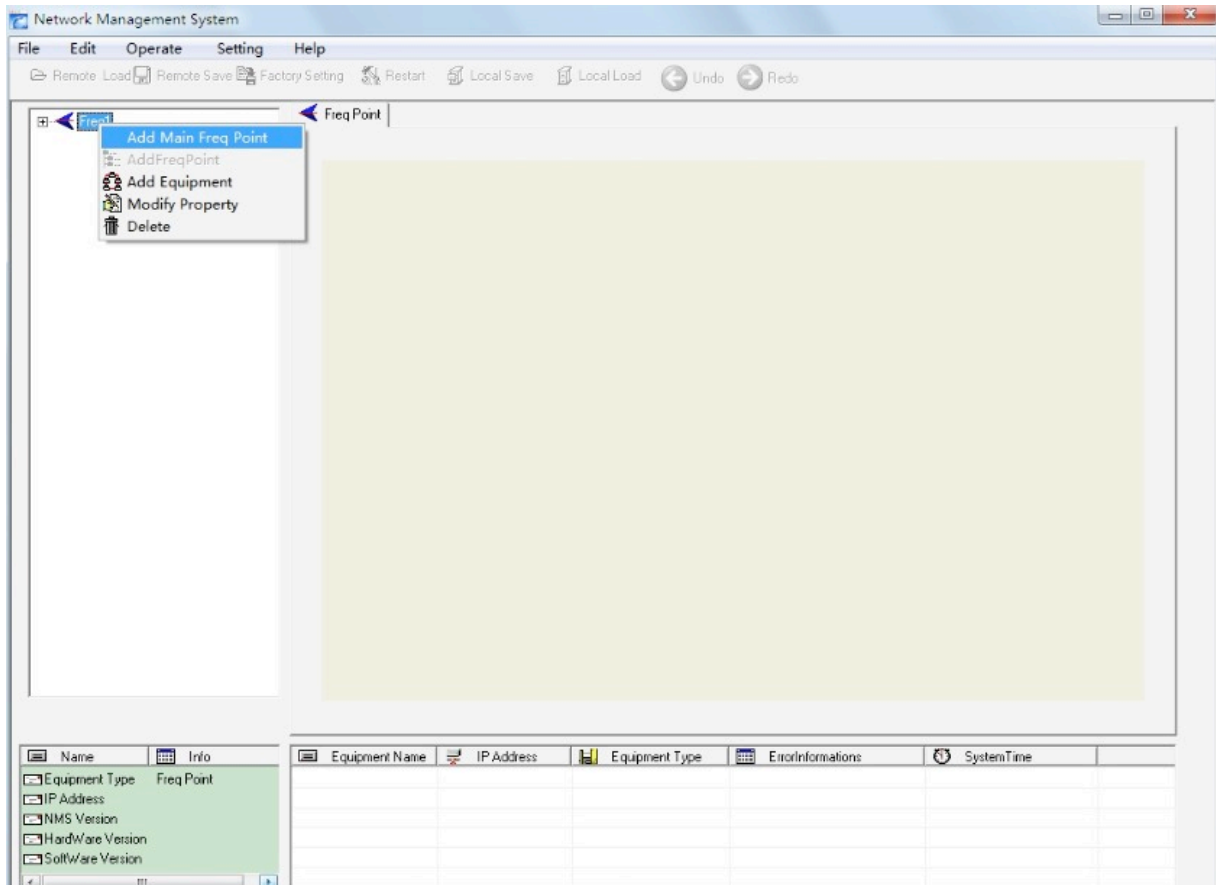
4.2.3 Adding Frequency Point



To begin, add a Frequency Point. This can be done by clicking “Add Freq Point” within the ‘Edit’ drop down menu.

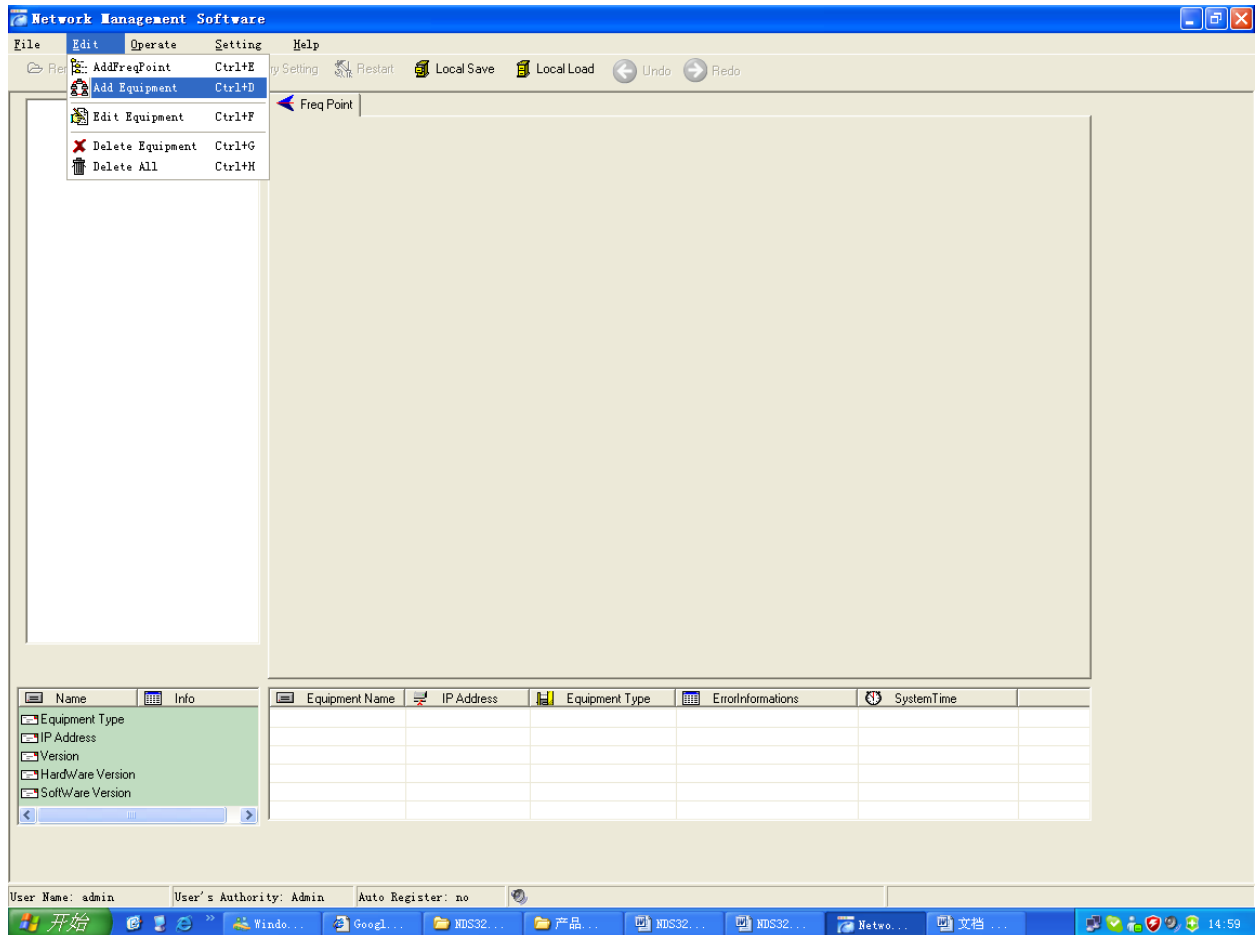


Alternatively, users can right click on an empty section of the left hand side column to pop up a short-cut menu and selecting "Add Main Freq Point".

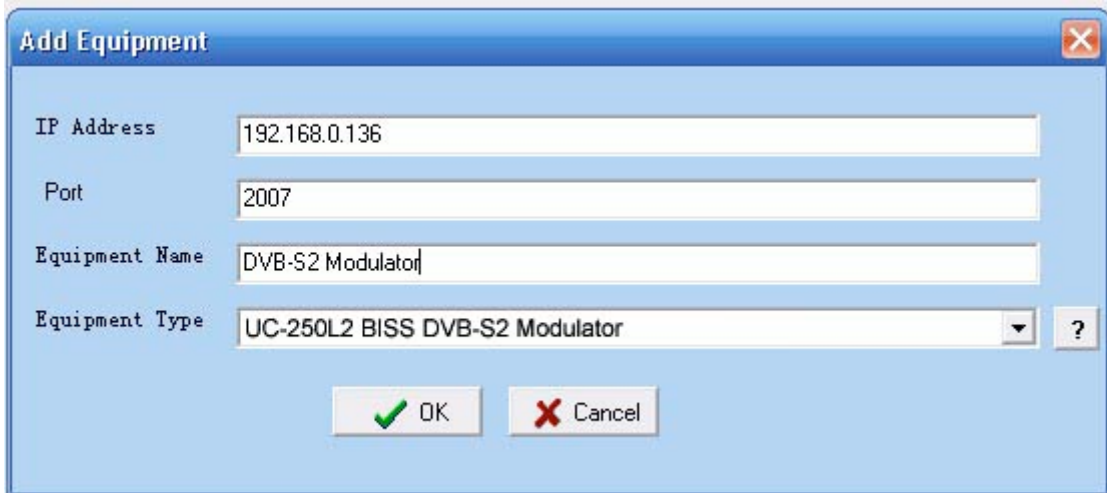


4.2.4 Adding Equipment under Given Frequency Point

When a Freq Point is selected, users can add equipment by right clicking then selecting 'Add Equipment' within the 'Edit' drop down menu.



4.2.5 Edit Equipment Interface



The screenshot shows a Windows-style dialog box titled "Add Equipment". It contains the following fields and controls:

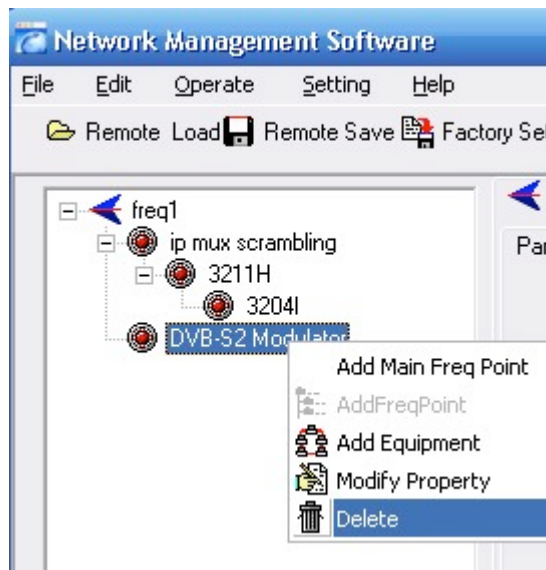
- IP Address:** A text box containing "192.168.0.136".
- Port:** A text box containing "2007".
- Equipment Name:** A text box containing "DVB-S2 Modulator".
- Equipment Type:** A dropdown menu showing "UC-250L2 BISS DVB-S2 Modulator" with a small downward arrow and a "?" button to its right.
- Buttons:** "OK" (with a green checkmark icon) and "Cancel" (with a red X icon) buttons at the bottom.

Users should follow the steps as below:



- Enter the device IP Address
- Enter the device Port Number (Default: 2007)
- Enter the desired Equipment Name
- Choose the correct equipment type in the drop down list of "Equipment Type" by clicking the "▼" or click symbol "?" to automatically determine the equipment type.

4.2.6 Delete Equipment


Users can remove equipment from device chains by right clicking the intended target and selecting "Delete" in the pop-up menu.

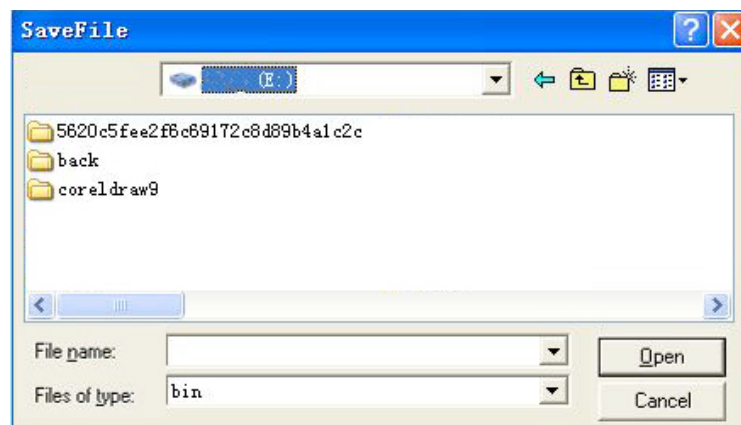



4.2.7 Save Configuration

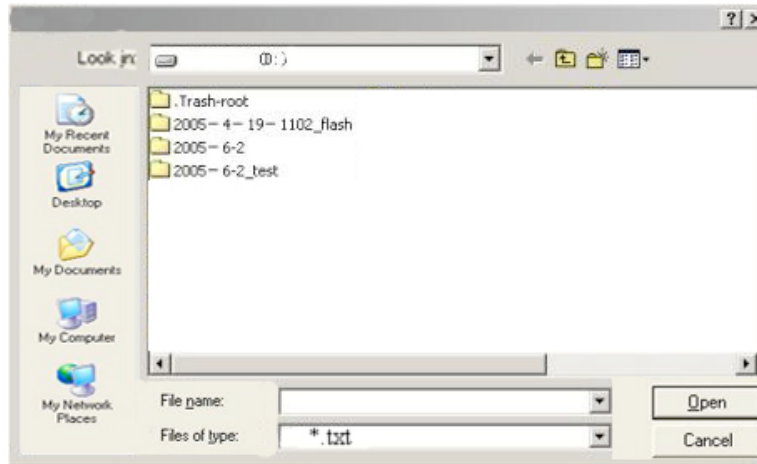
Once satisfied with configured settings users can commit the changes to memory by clicking the  Remote Save button on the toolbar. Previous settings can be reloaded from memory by clicking the  Remote Load button.

Users can also save and load setting configurations to their computer's hard drive.

Clicking the  Local Save button will pop-up a "Save File" dialog box which will allow users to choose their configuration file destination.



Similarly, users can click the  Local Load button to popup the "Read File" dialog box. User can then choose which configuration file to load unto the device.

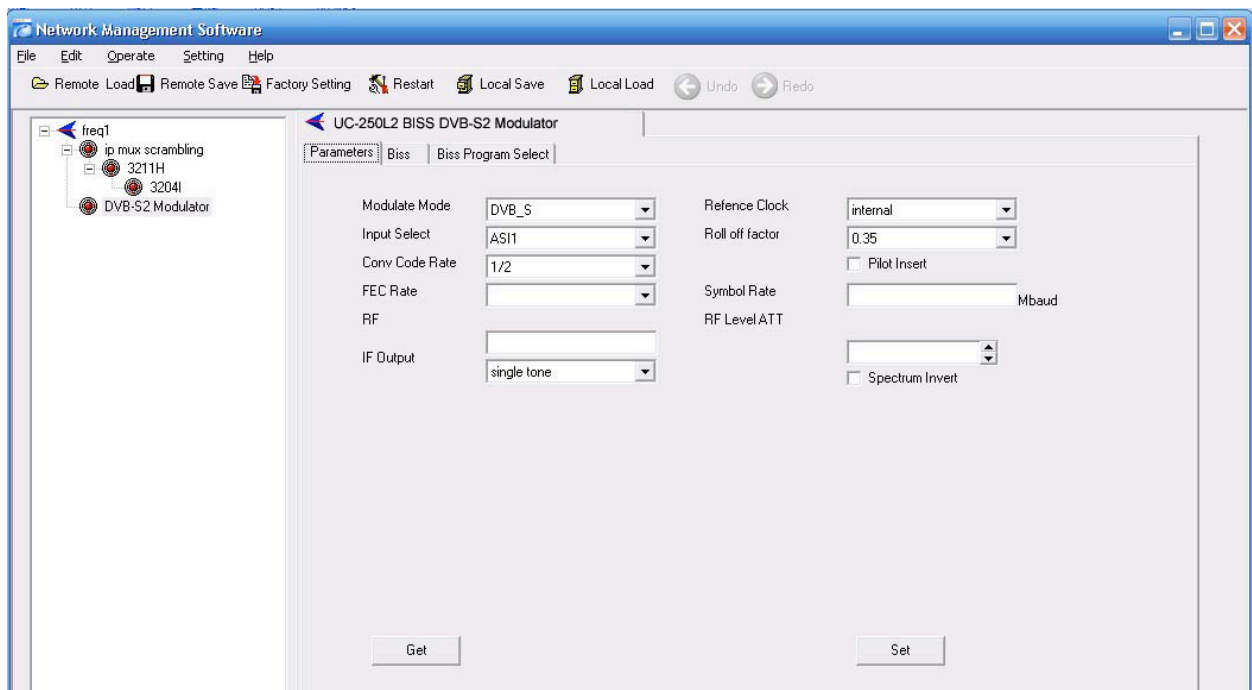


4.3 UC-250L2 BISS DVB-S2 Modulator Operation

Users can configure the UC-250L2 Modulator in this interface.

Set: Applies configuration to device.

Get: Reads current device configuration.



4.3.1 Modulation Mode

User can select the modulator's working mode and relevant constellation at this drop-down list.

DVB-S: DVB-S Modulation (QPSK)

DVB-S2 QPSK: DVB-S Modulation (QPSK)

DVB-S2 8PSK: DVB-S Modulation (QPSK)

4.3.2 Reference Clock

Internal: The modulator uses internal 10MHz crystal oscillator as reference clock.

External: The modulator uses external 10 MHz input as reference clock.

Auto: The device will prioritize any detected external reference clock. If none is present, system will default to internal clock.

4.3.3 Input Select

ASI1: The input TS sourced from port ASI1.

ASI2: The input TS sourced from port ASI2.

Auto (ASI1): The modulator will preferably select the input TS from ASI1 if it exists; otherwise it will select the input TS from ASI 2.

Auto (ASI2): The modulator will preferably select the input TS from ASI2 if it exists; otherwise it will select the input TS from ASI 1.

4.3.4 Roll off factor

This submenu will allow users to select the transmission Roll Off Factor.

There are 3 possible options: 0.35, 0.25 and 0.20.

4.2.5 Conv Rate

When set to DVB-S broadcasting, the convolutional code value can be set in this sub-menu. The possible options are: 1/2, 2/3, 3/4, 5/6, 7/8.

4.2.6 FEC Code Rate

When set to DVB-S2 QPSK broadcasting, the FEC (Forward Error Correction) ratio can be set in this sub-menu. The possible rates are: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10.

4.2.7 Pilot Insert

User can choose whether to insert the Pilot block in the check box.

4.2.8 Symbol Rate

Range: 0~45M@QPSK Constellation

0~30M@8PSK Constellation

4.2.9 RF ATT

User can set the attenuation of the RF output. The RF attenuation range is from 0-31.5db in 0.5db steps.

4.2.10 Modulation On Optional:

User can set the RF output mode for different applications.

Single tone: the RF output is an un-modulated carrier.

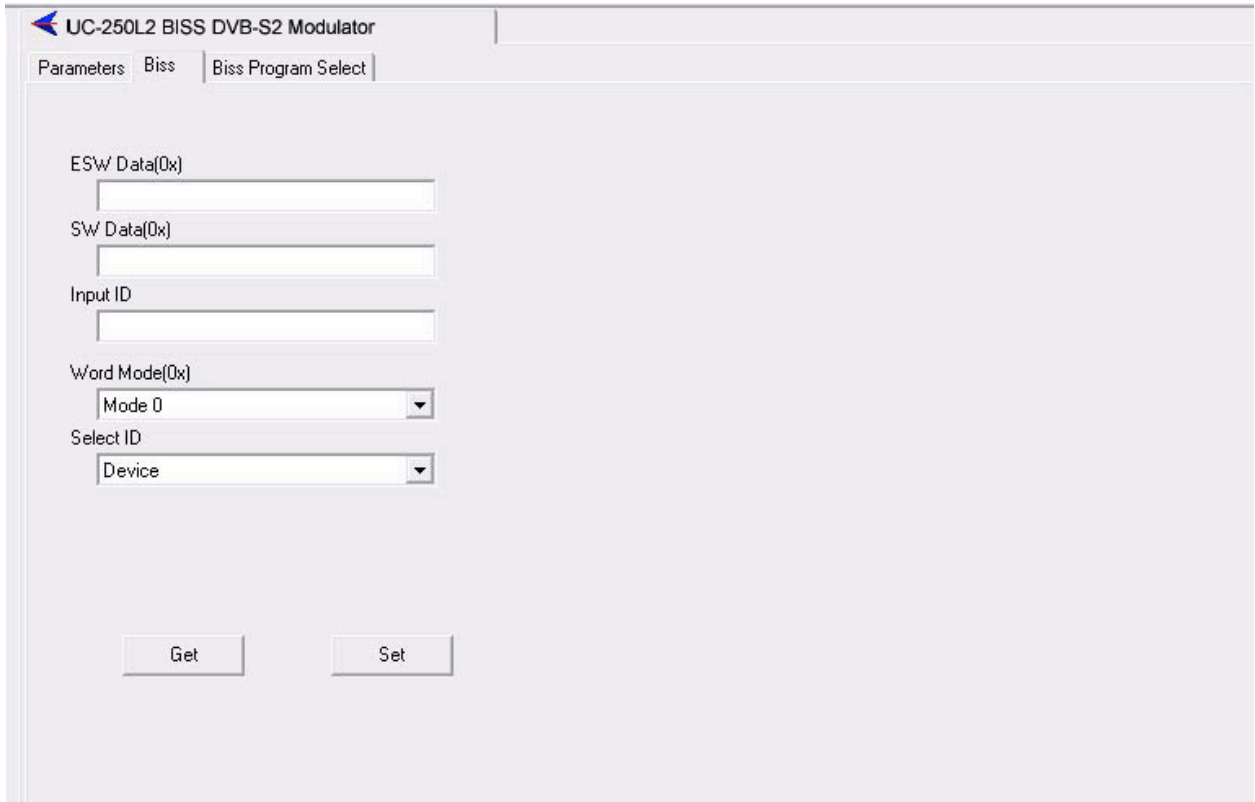
Modulation: The RF output is a modulated carrier.

Off: Turn off the RF output.

4.2.11 RF

User can set RF output frequency. The RF output frequency ranges from 950 to 2150MHz.

4.2.12 BISS



UC-250L2 BISS DVB-S2 Modulator

Parameters Biss Biss Program Select

ESW Data(0x)

SW Data(0x)

Input ID

Word Mode(0x)
 Mode 0

Select ID
 Device

Get Set

4.2.12.1 ESW Data (3.2.2.8.2.4)

ESW: Encrypted Session Word, a 16-character number

This submenu will not be visible if device is set to “Device” mode. Users can set an ESW value together with the ‘Input ID’ to complete encryption.

Note: Once the ESW has been entered by the front panel or by the NMS client, it shall become impossible to read it back through any unit interface.

The manual entry of the ESW shall also be in hexadecimal form; the 16 digits are entered with the most-significant digit first.

4.2.12.1 SW Data (3.2.2.8.1.3)

SW: Session Word, a fixed 12-character number.

User can set a session word for scrambling control.

Once the SW (Session Word) has been set, a 64-bit CW (Control Word) will be derived

from the SW according to the DVB-CSA (common scrambling algorithm) specification.

Note: Enter hexadecimal values.

4.2.12.3 Input ID (3.2.2.8.2.3)

In this interface, user can set the input ID.

4.2.12.4 Word Mode (3.2.2.8)

There are three possible options provided to be selected: Mode0, Mode 1 and Mode E.

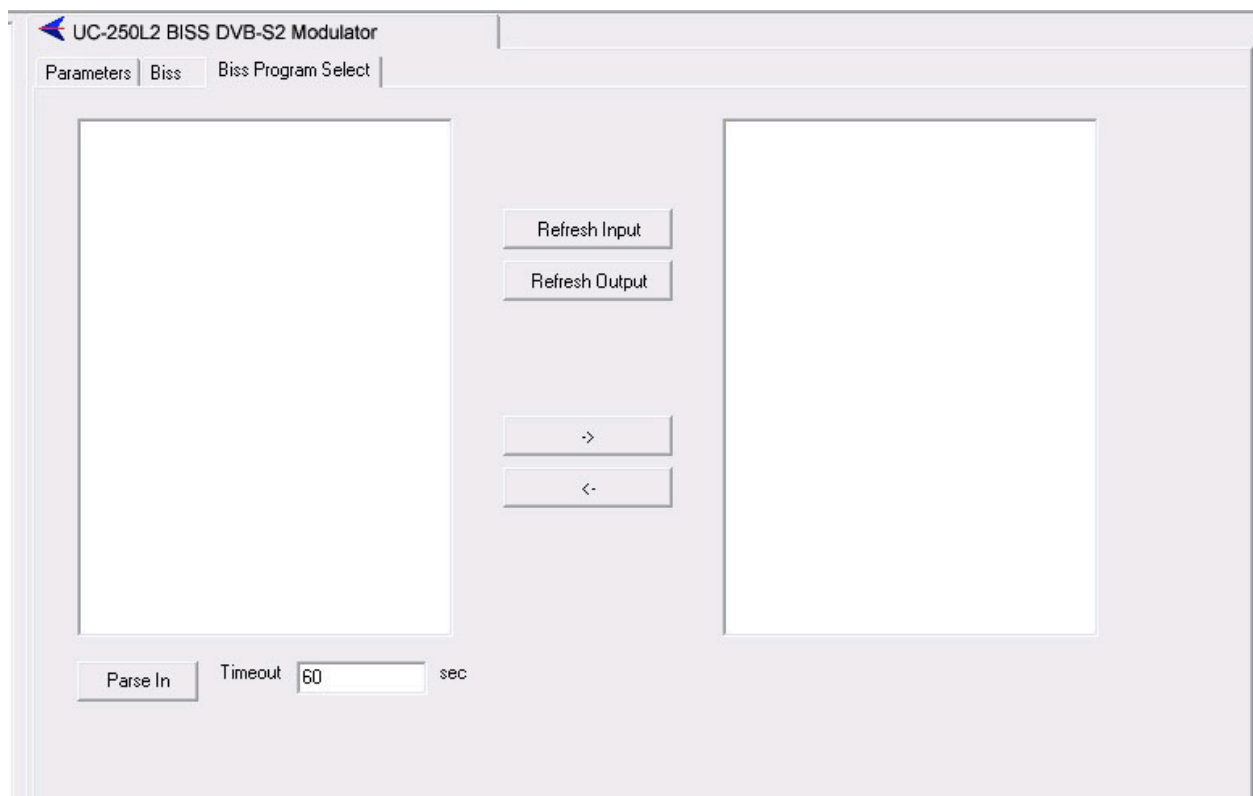
User can refer to 3.2.2.8 for more details.


4.2.12.5 Select ID (3.2.2.8.2.3)

There are two possible options provided to be selected: Input and Device.

User can refer to 3.2.2.8.2.3 for more details.

4.2.13 BISS Program Select



In this interface, user can decide the programs need to be scrambled by selecting the items in the left column, and then clicking the  button to put them in the right column. User can also remove the selected programs to left column by clicking



button.

It is necessary to set a timeout value for parsing program, here bigger values are recommended so that more programs have enough time to be parsed.

After finished the selection, use can click "Parse In" to confirm.

Chapter 5 Troubleshooting

Our ISO9001 quality assurance program has been approved by the CQC. All Upcom products pass testing and inspection before shipment. Please follow all instructions in this manual for proper device operation.

Immediately Unplug the device if:

- Power cord or socket damage occurs.
- Any liquid flowed into the device.
- Any dust causes a short circuit.
- Device is present in a damp environment.
- Device suffers from physical damage.
- Long term idle periods are planned.
- Maintenance is needed.
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed

Chapter 6 Packing List

- | | |
|----------------------------------|------|
| ● UC-250L2 BISS DVB-S2 Modulator | 1pcs |
| ● Power cord | 1pcs |
| ● ASI Cable | 1pcs |